

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application.

Claims 1 and 3-25 are now present in this application. Claims 22-25 are added by the present amendment. Claims 1, 22 and 23 are independent. No new matter is involved.

Reconsideration of this application, as amended, is respectfully requested.

Information Disclosure Citation

Applicants thank the Examiner for considering all of the references supplied with the Information Disclosure Statement (IDS) filed on August 27, 2004, and for providing Applicants with an initialed copy of the Form PTO-1449 filed therewith.

Rejections under 35 U.S.C. §103

Claims 1 and 3-6 stand rejected under 35 USC §103(a) stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,097,556 to Engel. This rejection is respectfully traversed.

Because the rejection is based on 35 U.S.C. §103, what is in issue in such a rejection is "the invention as a whole, "not just a few features of the claimed invention. Under 35 U.S.C. §103, " [a] patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." The determination under §103 is whether the claimed invention as a

whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. See, In re O'Farrell, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988). In determining obviousness, the invention must be considered as a whole and the claims must be considered in their entirety. See, Medtronic, Inc. v. Cardiac Pacemakers, Inc., 721 F.2d 1563, 1567, 220 USPQ 97, 101 (Fed. Cir. 1983).

In rejecting claims under 35 U.S.C. §103, it is incumbent on the Examiner to establish a factual basis to support the legal conclusion of obviousness. See, In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. F-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the Examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. Note, In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783 (Fed.

Cir. 1992). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

A suggestion, teaching, or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding." C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." See, In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999).

Moreover, it is well settled that the Office must provide objective evidence of the basis used in a prior art rejection. A factual inquiry whether to modify a reference must be based on objective evidence of record, not merely conclusory statements of the Examiner. See, In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

Furthermore, during patent examination, the PTO bears the initial burden of presenting a *prima facie* case of unpatentability. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). If the PTO fails to meet this burden, then the Applicant is entitled to the patent. Only when a *prima facie* case is made, the burden shifts to the applicant to come forward to rebut such a case.

Claim 1 positively recites a washing machine having a combination of features, including (1) an outer tub disposed in a casing for receiving washing water therein; (2) an inner tub rotatably disposed in the outer tub for receiving laundry therein; and (3) a plasma discharge unit

for performing a plasma discharge on the washing water, wherein the plasma discharge unit includes: (a) an inflow passage connected to the outer tub for introducing washing water inside the outer tub; (b) a discharge box for receiving washing water introduced through the inflow passage and having a space where a plasma discharge is performed; (c) an electrode disposed at the discharge box; and (d) a high voltage generator electrically connected to the electrode for applying a voltage to the electrode.

Engel fails to disclose this claimed combination of features. Engel's washing machine 10 include no plasma discharge unit whatsoever. Engel discloses a completely separate ozone generating system, not disclosed as a plasma discharge unit, as claimed, for use with conventional washing machines 10, and this is not what is recited. The claimed invention recites a washing machine that includes a plasma discharge unit for performing a plasma discharge on the washing water. Engel has no such disclosure.

In an attempt to remedy the shortcomings of Engel, the Office Action first resorts to an improper *per se* rule of obviousness. The Office Action relies on In re Harza, 124 USPQ 378 (CCPA 1960) to improperly conclude that it is well settled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced.

The Examiner argues, in reliance upon Harza, that to add another filter at the washer inflow passage to existing outflow filters 28 and 30 would be a mere duplication of parts and, therefore, would have been obvious to one of ordinary skill in the art.

Applicants respectfully submit that the decision in Harza is limited to its facts. The court in Harza stated that the only difference between the reference's structure for sealing concrete and that of Harza's claim 1 was that the reference's structure had only a single rib (i.e., arm) on each

side of a web, whereas the claim required a plurality of such ribs. See, Harza, 274 F.2d at 671, 124 USPQ at 380. The court stated that “[i]t is well settled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced, and we are of the opinion that such is not the case here.” *Id.*

The Examiner does not compare the facts in Harza with those in the present case and explain why, based upon this comparison, the legal conclusion in the present case should be the same as that in Harza. Instead, the Examiner relies upon Harza as establishing a *per se* rule that duplication of parts is obvious. As stated by the Federal Circuit in In re Ochiai, 71 F.3d 1565, 1572, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995), “reliance on *per se* rules of obviousness is legally incorrect and must cease.” For a *prima facie* case of obviousness to be established, the teachings from the prior art itself must appear to have suggested the claimed subject matter to one of ordinary skill in the art. See, In re Rinehart, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976). The mere fact that the prior art could be modified as proposed by the examiner is not sufficient to establish a *prima facie* case of obviousness. See, In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). The examiner must explain why the prior art would have suggested to one of ordinary skill in the art the desirability of the modification. See Fritch, 972 F.2d at 1266, 23 USPQ2d at 1783-84.

With respect to claim 3, Applicants respectfully submit that one of ordinary skill in the art would not have proper incentive to add a filter to Engel’s washer input when what Engel is introducing into the washing machine is ozonated water. Whereas Engel needs its filters 28 and 30 to recirculate the water in its holding tank located separate and apart from its washing

machines, to continuously clean and agitate the water and mix ozone in the water in the holding tank, once the water is drawn out of the holding tank, there is no further need to add yet another filter at a washing machine inflow passage because the ozonated water is already double filter clean and the extra cleaning agent -ozone- mixed in and ready to clean the laundry. The Examiner has not explained why one of ordinary skill in the art would go to the trouble and expense of adding this extra filter when Engel fails to disclose doing so, and in view of the previous double filtering and inclusion of the additional cleaning agent, i.e., ozone, is already therein.

The Office Action also speculates that it would be obvious to combine Engel's electrodes and high voltage generator in the washing machine of Engel such that they form a single piece and to form the electrodes/generator within the washing tub.

The Office Action provides no objective factual evidence that one of ordinary skill in the art would have any incentive to combine the large external ozonating system of Engel inside of one of Engel's washing machine 10, especially when the drawings indicate that the ozonating unit and system is larger than either of the washing machines 10.

All that the Office Action states in this regard is that combining two parts into one makes the apparatus more compact. However, this conclusion is not supported by logic. Whereas combining some items into one may result in a smaller combination, that conclusion does not follow from the premise on which it is based. For example, combining a car and a trailer requires a hitch, which often results in the combination of a cart and a trailer that is longer than the individual lengths of the car and the trailer.

The Office Action continues by speculating that it would be obvious to make integral the electrodes/generator of Engel with Engel's washing machine "since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together only involves ordinary skill in the art," citing Howard v. Detroit Stove Works, 150 U.S. 164 (1893).

Applicants respectfully submit that the facts of this case differ significantly from the facts of this Application and from the claimed invention. The Detroit Stove Works decision dealt with a stove which had a flange, which may be either cast on a fire pot in a single piece, or made separate from the fire pot and riveted or otherwise fastened to it. A cast iron stove with a flange is entirely different from a washing machine with separate operating subunits, the latter not being able to be cast in a single unitary piece.

Moreover, Applicants respectfully direct the Examiner's attention to what they believe is a more relevant decision, which cites, and distinguishes, the Detroit Stove Works decision.

Reference is made to the decision in In re Application of Elmer E. Wickersham, 24 USPQ 368, (CCPA 1935), which indicated that making in one integral piece what was previously made in two pieces fastened together does not constitute invention, but to do so may constitute invention when it also involves elimination of part of a machine without eliminating its function. The patent application involved in that appeal concerned combining a threshing machine housing and the main frame into a unitary and substantially rigid shell-like structure, the heavy weight of the main frame of the prior art structures having been eliminated without the sacrifice of rigidity and strength. The Appellant argued that, by eliminating the multiplicity of beams, struts and girders of the old art and by substituting his new structure with fewer parts, he has contributed to

the art enormously in economy of production.

The Court determined that this appeal falls under the principle that: "A reconstruction of a machine, so that a less number of parts will perform all the functions of the greater, may be invention of a high order." The court analogized to a decision regarding a patent with respect to which the appellant discovered that heavy pressure from a mechanically applied device was not a necessary or helpful factor in sealing envelopes. The patentee omitted the presser plate device, so that the new machine, with the self-sealing stack adjacent to the moistening device, performed with a less number of parts all the functions of the old model machines. He put the whole sealing job upon the stack; whereas before it had been begun in the machine and completed in the stack. The patent was held valid in the decision the court said: " . . . it cannot be questioned that simplicity is the result of the inventive faculty when it succeeds in dispensing with parts which have long been in use, and which were found to be cumbersome and unnecessary. . . ."

Applicants respectfully submit that the facts of the Wickersham decision are more on point than are the facts on the Detroit Stove works decision. Applicants have provided a plasma discharge unit in a washing machine to clean clothes, which is an accomplishment not contemplated by Engel in any way whatsoever, and, in doing so, have eliminated the huge external system of Engel. It would appear that this is evidence of non-obviousness of the claimed invention with respect to Engel.

Additionally, Engel just discloses the laundry waste water treatment apparatus having the ozonators 24 which inject ozone into the water in holding tank 14 at a controlled rate, but does not teach or hint the washing machine having a specific plasma discharge unit including an inflow passage, a discharge box, an electrode and a high voltage generator as recited in claim 1.

In this regard, Engel does not disclose that its ozonators are plasma discharge units, either explicitly, or inherently (i.e., not just possibly, and not just probably, but necessarily).

Also, the assertion in the rejection that Engel's holding tank 14 has ozonators formed therewith by electrodes 56 with a high voltage corona generator attached is not supported by Engel's disclosure, which indicates that the ozonators 24 and the holding tank 14 are separate elements which are distanced from each other and are connected by the ozone supply line 32.

In other words, the Office Action would have us believe that a mere reference to the Detroit Stove Works decision will automatically result in a complete redesign of Engel's large scale ozonator-holding tank, recirculation system external to Engel's washing machines to achieve the claimed washing machine that includes the claimed plasma discharge unit. Applicant respectfully disagrees for the reasons set forth above.

Accordingly, the Office Action fails to make out a *prima facie* case of obviousness of the claimed invention.

Thus, reconsideration and withdrawal of this rejection of claims 1 and 3-6 are respectfully requested.

Claims 7-10, 12, 13 and 15-20 stand rejected under 35 USC §103(a) as being unpatentable over Engel in view of U.S. Patent 3,954,586 to Lowther. This rejection is respectfully traversed.

Engel does not render the claimed invention obvious for reasons discussed above. Moreover, Lowther is not applied to remedy the aforementioned deficiencies of Engel with respect to the claimed invention. So, no matter how Lowther is applied, the resulting modified version of

Engel will not disclose, suggest, or otherwise render obvious the claimed invention.

Additionally, Lowther is directed to "commercial large scale corona generators" (col. 1, lines 21-22. The Office Action fails to provide objective factual evidence that one of ordinary skill in the art would turn to a commercial large scale ozone generator to modify Engel's Laundromat sized corona generator and, even further, to scale the entire system down to fit inside of a washing machine, as claimed.

Accordingly, the Office Action fails to make out a *prima facie* case of obviousness of the claimed invention.

Reconsideration and withdrawal of this rejection of claims 7-10, 12, 13 and 15-20 are respectfully requested.

Claims 11 and 21 stand rejected under 35 USC §103(a) as being unpatentable over Engel in view of Lowther, and further in view of U.S. Patent 5,768,730 to Matsumoto et al. ("Matsumoto"). This rejection is respectfully traversed.

Engel does not render the claimed invention obvious for reasons discussed above. Moreover, Lowther is not applied to remedy the aforementioned deficiencies of Engel with respect to the claimed invention. So, no matter how Lowther is applied, the resulting modified version of Engel will not disclose, suggest, or otherwise render obvious the claimed invention.

Additionally, Lowther is directed to "commercial large scale corona generators" (col. 1, lines 21-22. The Office Action fails to provide objective factual evidence that one of ordinary skill in the art would turn to a commercial large scale ozone generator to modify Engel's Laundromat sized corona generator and, even further, to scale the entire system down to fit inside

of a washing machine, as claimed.

Furthermore, even if one of ordinary skill in the art were properly motivated to turn to Matsumoto to provide a contamination indicator in the Engel-Lowther reference combination, the resulting modified version of Engel would still not disclose, suggest, or otherwise render obvious, the claimed invention.

Accordingly, the Office Action fails to make out a *prima facie* case of obviousness of the claimed invention.

Reconsideration and withdrawal of this rejection of claims 11 and 21 are respectfully requested.

Claim 14 stands rejected under 35 USC §103(a) as being unpatentable over Engel and Lowther and further in view of U.S. patent 2,732,338 to Moody. This rejection is respectfully traversed.

Engel does not render the claimed invention obvious for reasons discussed above. Moreover, Lowther is not applied to remedy the aforementioned deficiencies of Engel with respect to the claimed invention. So, no matter how Lowther is applied, the resulting modified version of Engel will not disclose, suggest, or otherwise render obvious the claimed invention.

Additionally, Lowther is directed to "commercial large scale corona generators" (col. 1, lines 21-22. The Office Action fails to provide objective factual evidence that one of ordinary skill in the art would turn to a commercial large scale ozone generator to modify Engel's Laundromat sized corona generator and, even further, to scale the entire system down to fit inside of a washing machine, as claimed.

Furthermore, even if one of ordinary skill in the art were properly motivated to turn to Moody to provide a contamination indicator in the Engel-Lowther reference combination, the resulting modified version of Engel would still not disclose, suggest, or otherwise render obvious, the claimed invention.

Accordingly, the Office Action fails to make out a *prima facie* case of obviousness of the claimed invention.

Reconsideration and withdrawal of this rejection of claim 14 are respectfully requested.

New Claims

New claim 22 recites a washing machine comprising: an outer tub disposed in a casing for receiving washing water therein; an inner tub rotatably disposed in the outer tub for receiving laundry therein; a plasma discharge unit for performing a plasma discharge on the washing water; and a circulation unit for re-circulating washing water inside the plasma discharge unit into the outer tub, wherein the circulation unit includes: a circulation duct of which one end is connected to the discharge box and another end is connected to the outer tub; and a circulation pump disposed at the circulation duct for pumping washing water.

Engel, the primary reference applied in the aforementioned rejections discloses ozonators 24 which are merely connected with the resupply line 17 and the water supply line 12 by the ozone supply line 32 but are not disposed at the resupply line 17 and the water supply line 12, i.e. Engel does not teach or suggest a plasma discharge unit disposed at the circulation unit including a circulation duct of which one end is connected to the discharge box and another end is connected to the outer tub; and a circulation pump disposed at the circulation duct for pumping

washing water.

Accordingly, Applicants respectfully submit that the invention as recited in new claim 22 patentably defines over the applied art.

New claim 23 recites a washing machine comprising: a casing; an outer tub disposed in the casing for receiving washing water therein; an inner tub rotatably disposed in the outer tub for receiving laundry therein; and a plasma discharge unit for performing a plasma discharge on the washing water, wherein the plasma discharge unit is disposed between the casing and the outer tub.

Applicants respectfully submit that the combination including a plasma discharge unit disposed between the casing and the outer tub is neither disclosed nor suggested by the applied art.

Accordingly, Applicants respectfully submit that claims 23 to 25 patentably define the applied art.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite

prosecution of this application, the Examiner is invited to telephone Robert J. Webster, Registration No. 46,472, at (703) 205-8000, in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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